

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
16 October 2003 (16.10.2003)

PCT

(10) International Publication Number
WO 03/084665 A1

(51) International Patent Classification⁷: **B03C 3/155**

(21) International Application Number: PCT/FI03/00272

(22) International Filing Date: 10 April 2003 (10.04.2003)

(25) Filing Language: Finnish

(26) Publication Language: English

(30) Priority Data:
20020700 11 April 2002 (11.04.2002) FI

(71) Applicant (for all designated States except US): **OY LIFA
IAQ LTD** [FI/FI]; Hämeentie 103 D, FIN-00550 Helsinki
(FI).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **KULMALA, Ilpo**
[FI/FI]; Keskustori 7 A 9, FIN-33100 Tampere (FI).
HEINONEN, Kimmo [FI/FI]; Kanjoninkatu 17 A 11,
FIN-33720 Tampere (FI).

(74) Agent: **SEPPO LAINE OY**; Itämerenkatu 3 B,
FIN-00180 Helsinki (FI).

(81) Designated States (*national*): AE, AG, AL, AM, AT (utility model), AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ (utility model), CZ, DE (utility model), DE, DK (utility model), DK, DM, DZ, EC, EE (utility model), EE, ES, FI (utility model), FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK (utility model), SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

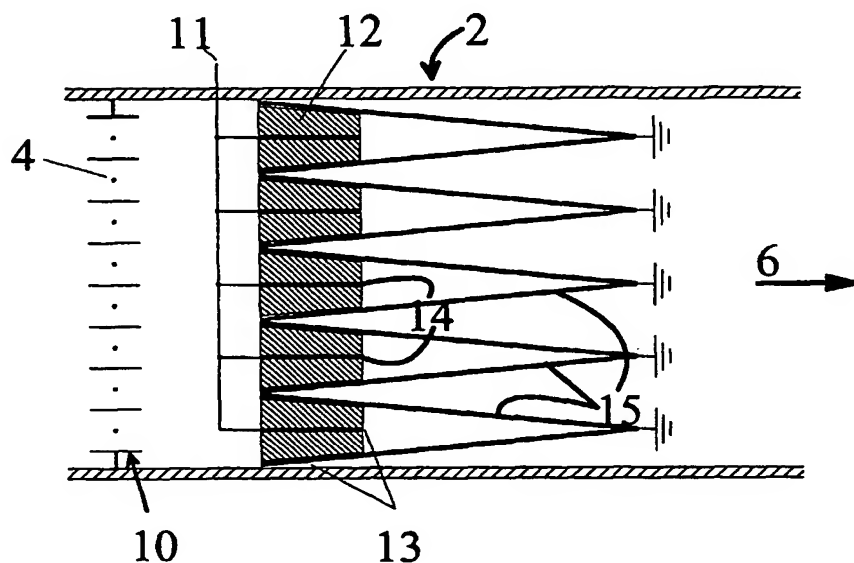
(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: ELECTROSTATIC FILTER CONSTRUCTION



(57) Abstract: This publication discloses an electrostatic filter construction (2), which includes electrodes (14) connected to a first electrical potential, second electrodes (15), which are electrically insulated from the first electrodes (14), and an insulating material (12) acting as a particle filter, which is located between the first (14) and the second electrodes (15). According to the invention, in both of the electrodes (14, 15) the electrode material used is a material, such as activated carbon, which is permeable to a gas and which filters the gas, and which has a low electrical conductivity, and both electrodes (14, 15) are located essentially parallel to the direction of the airflow.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/FI 03/00272

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: B03C 3/155

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: B03C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-INTERNAL, WPI PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|---|-----------------------|
| X | US 5549735 A (REX R. COPPOM), 27 August 1996 (27.08.96), column 8, line 66 - column 9, line 61, figures 1,5, abstract -- | 1-8 |
| A | WO 9822222 A1 (BLUE AIR AB), 28 May 1998 (28.05.98), figures 1-3, claims 1-8, abstract ----- | 1-8 |

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

Date of mailing of the international search report

25 June 2003

01 July 2003 (01.07.2003)

Name and mailing address of the ISA/
Swedish Patent Office
Box 5055, S-102 42 STOCKHOLM
Facsimile No. +46 8 666 02 86

Authorized officer

Ulf Nyström/ELY
Telephone No. +46 8 782 25 00

INTERNATIONAL SEARCH REPORT
Information on patent family members

02/06/03

International application No.

PCT/FI 03/00272

| Patent document cited in search report | | | Publication date | Patent family member(s) | | Publication date |
|---|---------|----|---------------------|----------------------------|------------|---------------------|
| US | 5549735 | A | 27/08/96 | AU | 2700395 A | 04/01/96 |
| | | | | CA | 2190954 A | 14/12/95 |
| | | | | JP | 10501175 T | 03/02/98 |
| | | | | US | 5593476 A | 14/01/97 |
| | | | | WO | 9533570 A | 14/12/95 |
| ----- | | | | | | |
| WO | 9822222 | A1 | 28/05/98 | AU | 5078898 A | 10/06/98 |
| | | | | SE | 9604279 D | 00/00/00 |
| ----- | | | | | | |